## AMENDMENTS TO THE CLAIMS:

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

## 1-7. (Cancelled)

8. (New) A method of ion beam processing of a surface of a substrate, comprising:

positioning the substrate relative to an ion beam that is generated by an ion beam source;

partially processing a known property pattern of the surface of said substrate by said ion beam such that a new technologically defined property pattern is formed; and

adjusting a current geometric action pattern of said ion beam on said surface of said substrate as a function of the known property pattern and of the new technologically defined property pattern, and as a function of the method progress by at least one of modifying the beam characteristics or by pulsing the ion beam.

9. (New) A method according to claim 8, wherein said substrate and the ion beam source rotate relative to one another and/or are moved uniformly or non-uniformly linearly, in a circle, or in a technologically pre-specified direction.

- 10. (New) A method according to claim 8 or 9, wherein said ion beam is formed from at least two individual ion beams having respective beam characteristics which are controlled synchronously or independent of one another and/or are pulsed simultaneously or temporally offset from one another.
- 11. (New) A method according to claim 8 or 9, wherein an angle between a surface normal of said surface of said substrate to be processed and the axis of said ion beam striking said surface is modified.
- 12. (New) A method according to claim 1, wherein said ion beam source is a wide-beam ion source.
- 13. (New) A method according to claim 10, wherein an angle between a surface normal of said surface of said substrate to be processed and the axis of said ion beam striking said surface is modified.

14. (New) A method according to claim 8 or 9, wherein the current geometric action pattern of said ion beam on the surface of the substrate is measured prior to and/or during the course of said method by an ion probe array that is arranged in a plane of the surface of the substrate to be processed.

- 15. (New) A method according to claim 10, wherein the current geometric action pattern of said ion beam on the surface of the substrate is measured prior to and/or during the course of said method by an ion probe array that is arranged in a plane of the surface of the substrate to be processed.
- 16. (New) A method according to claim 11, wherein the current geometric action pattern of said ion beam on the surface of the substrate is measured prior to and/or during the course of said method by an ion probe array that is arranged in a plane of the surface of the substrate to be processed.
- 17. (New) A method according to claim 13, wherein the current geometric action pattern of said ion beam on the surface of the substrate is measured prior to and/or during the course of said method by an ion probe array that is arranged in a plane of the surface of the substrate to be processed.

18. (New) An apparatus for ion beam processing of a surface of a substrate, comprising:

a substrate support for mounting at least one substrate presenting said surface, said substrate support being disposed within a vacuum chamber and being movable in a Y axis and in an X axis; and

an ion beam source being mounted in a wall of said vacuum chamber such that an axis of an ion beam from said ion beam source is perpendicular to said surface of the substrate to be processed in a Z axis or is positionable in an axis that is inclined to said Z axis, such that a distance from said ion beam source to said surface of said substrate to be processed is fixed or variable.

- 19. (New) An apparatus according to claim 18, wherein said ion beam source is formed from at least two individual ion beam sources, the individual ion beams of which form a common current geometric action pattern of said ion beam on said surface of the substrate.
- 20. (New) An apparatus according to claim 18, wherein said ion beam source is a wide-beam ion source.